

ASML

Tech - Semiconductors / The Netherlands

Company results

Target Price EUR 80.00**Expected performance (12 mth) 18.2%****BUY EUR 67.70 (Closing price 20-Aug-13)**

EUV moves ASML closer to a monopoly

21 August 2013

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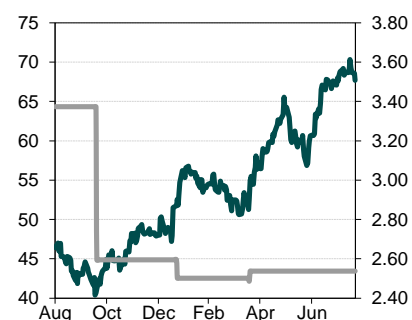
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Opinion on qualitative criteria

Accounting	IFRS 01/01/2004
Quality of track record	High
Solvency	High
Currency risk	Neutral
Risk of asset write-off	Low

Share price performance/EPS revision (EUR)

Price ABN AMRO EPS est. 2013



Source: FactSet, ABN Amro Equity Research

Market capitalisation (EUR m)	30,248.9
No. of shares (m)	446.8
Free float	71.1%
1/3/12 mth perf. (%)	0.0/9.1/40.0
High/low 52 weeks (EUR)	70.33/40.37
Next results due	16 October 2013
Price/book value (x)	4.2
Volatility (β) (5yrs/DJ Euro Stoxx)	0.9
Reuters symbol	ASML.AS
Bloomberg symbol	ASML NA
Website	www.asml.com

We have more confidence in EUV

At SEMICON West we have seen several indications that EUV acceptance has grown. EUV can handle situations far better when factory circumstances start to deviate from ideal circumstances, which should lead to superior production yields for next generation chips. With EUV it is possible to develop critical layers with a single exposure, allowing for a significant reduction in the number of non-lithography process steps. As a result, ASML will be in the position to claim more of its clients' capex as it will have a monopoly on EUV. We believe ASML will demonstrate 80W source power with 3Q13, giving further backing to a scenario with strong EPS growth towards 2016.

Expectation for the entire equipment market is positive as well

Both SEMI and Gartner expect semi equipment spending to increase by some 20% in 2014, mainly as a result of a strong rebound in memory spending. Therefore, ASML's earnings momentum is likely to remain positive. Possible small delays on EUV will not be amplified by an economic downturn. In such a scenario, we believe investors should keep focus on EUV upside. As such, we do not focus on our EPS14 estimate which is 3% below the street.

Valuation: reiterate Buy, target price up from EUR 60 to EUR 80

Based on increased confidence in EUV, we pull forward our EPS estimate of c. EUR 7.0 from 2018 to 2016. As a result, our EPS16 moves up from EUR 5.2 to EUR 7.1. We consolidate Cymer increasing margin potential as a result of vertical integration. Our DCF moves up to EUR 80. We reiterate Buy.

Year to December	2012	2013e	2014e	2015e	2016e
Sales (EUR m)	4,731.5	5,181.9	6,755.8	7,863.6	9,884.0
EBITDA (EUR m)	1,346.7	1,295.0	1,981.6	2,592.4	3,488.4
Net profit excl. extr. & amort. (EUR m)	1,149.6	934.2	1,627.2	2,262.6	3,131.4
Net profit (EUR m)	1,146.3	930.9	1,623.9	2,259.3	3,128.1
EBITDA margin (%)	28.5	25.0	29.3	33.0	35.3
ROCE (incl. goodwill) (%)	46.9	26.2	35.7	48.1	62.6
Net gearing (%)	(47.3)	(32.1)	(43.5)	(52.8)	(60.5)
EPS before extr. & amort. (EUR)	2.71	2.21	3.72	5.17	7.15
EPS (EUR)	2.70	2.20	3.71	5.16	7.14
DPS (EUR)	0.53	0.60	0.66	0.73	0.80
% change sales	(16.3)	9.5	30.4	16.4	25.7
% change EPS (excl. extr. & amort.)	(22.0)	(18.4)	68.1	39.0	38.4
EV/Sales	3.64	5.22	3.80	3.03	2.16
EV/EBITDA	12.8	20.9	13.0	9.2	6.1
P/E (excl. extr. & amort.)	15.3	30.6	18.2	13.1	9.5
P/E	15.3	30.7	18.3	13.1	9.5
PE/growth (excl. extr.)	2.1	nmf	1.1	0.2	0.2
Free cash flow yield (%)	6.2	3.5	5.5	7.0	9.5

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1. Investment case

We have more confidence in EUV

At SEMICon West we have seen several indications that EUV acceptance has grown. Firstly, several EUV results showed that this technique handles situations far better when factory circumstances start to deviate from ideal circumstances, which should lead to superior production yields for next generation chips. Secondly, Nikon's presentation where it tried to push multiple patterning as a competitive alternative to EUV contained an unrealistic low throughput for EUV. We believe ASML will demonstrate 80W source power with 3Q13, giving further backing to a scenario with strong EPS growth towards 2016. With EUV it is possible to develop critical layers with a single exposure, allowing for a significant reduction in the number of non-lithography process steps. As a result, ASML will be in the position to claim more of its clients' capex as it will have a monopoly on EUV.

Expectation for the entire equipment market is positive as well

Both SEMI and Gartner expect semi equipment spending to increase by some 20% in 2014, mainly as a result of a strong rebound in memory spending. ASML's earnings momentum is likely to remain positive. Possible small delays on EUV will not be enforced by an economic downturn. In such a scenario, we believe investors should keep focus on the upside EUV can still realise. As such, we do not focus on our EPS14 estimate which is 3% below the street.

Pull EPS of EUR 7.0 forward from 2018 to 2016

On the back of increased confidence in EUV, we pull forward our EPS estimate of c. EUR 7.0 from 2018 to 2016. As a result, our EPS16 moves up from EUR 5.2 to EUR 7.1. We also include the Cymer acquisition in our model, which increases margin potential over time as a result of vertical integration. We illustrate that gross margin can move up to 50% over time, but pencil in a gross margin of 45% in 2016 and following years. We keep some slack in our gross margin in order to allow for additional investments to keep system requirements on track.

Valuation: reiterate Buy, target price up from EUR 60 to EUR 80

As a result of the pull forward of EPS growth and the inclusion of Cymer our DCF valuation enhances from EUR 60 to EUR 80. Based on P/E14 ASML trades at 18.5x, which might seem rich. ARM, another near monopolist within the sector, trades at 35.2x P/E14. As such, ASML trades at a discount of almost 50%, while we show that our projected EPS growth is superior to ARM's consensus EPS growth in the next few years and ASML has a higher ROCE profile as a starting point in 2012. Furthermore, ARM's near monopoly position will be challenged by Intel, which to us seems like a stronger potential competitor than Nikon is for ASML. We raise our target price from EUR 60 to EUR 80 and reiterate our Buy rating.

Summary: EUV will move ASML closer to becoming a monopolist

Lithography has been the key driver of lower cost per semiconductor component. By introducing leading edge techniques and keeping a head start on cost of ownership compared to competition ASML has grown its market share to c. 75%-80%. At this point, ASML is the only company in the world developing EUV. With EUV the industry can continue Moore's law, while ASML can further increase its market share. ASML's biggest clients are large co-investors in the company, which will make it easier for them to accept a single supplier relationship. In our view, further proof of EUV getting ready for industrialization will come with the 3Q13 results, where the company will demonstrate 80W power source stability. We believe that will increase confidence in our 2016 EPS number, which diminishes valuation to 10x P/E16.

2. Increased confidence in EUV

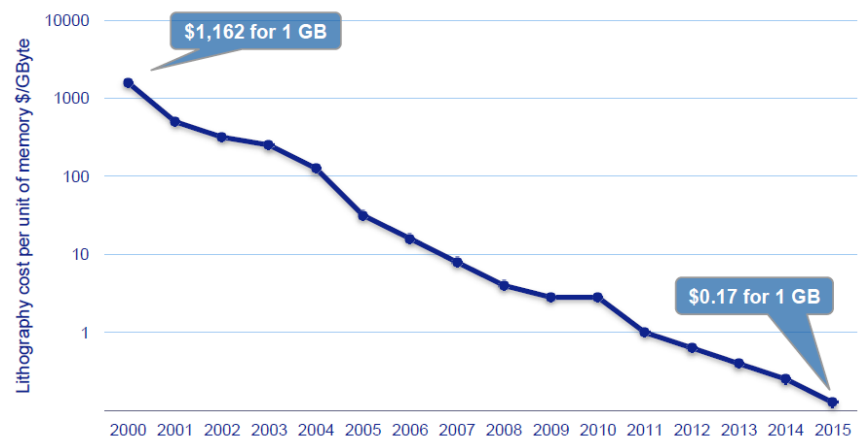
SEMICON West showed that EUV acceptance has increased. EUV increases possible shrinkage and production yields, while cycle time is reduced at the expense of non-lithography process steps. Since ASML has made significant progress on its EUV roadmap, we have more trust that it can roll-out 60-66 EUV machines in 2016. As we have showed in our upgrade note of January that should facilitate an EPS of above EUR 7.00.

Moore's law extremely important for the industry

2.1. Moore's law needs EUV

Lithography has been the driving force for Moore's law: "doubling of components per chip every 12 months resulting in lower costs per component". For consumers Gartner has made Moore's law more transparent by showing the lithography costs of 1GB high quality Flash memory over time. At inception the costs were USD 1,162 per 1 GB. After 15 years the cost per 1 GB has dropped to only USD 0.17.

Figure 1: Price development high quality Flash

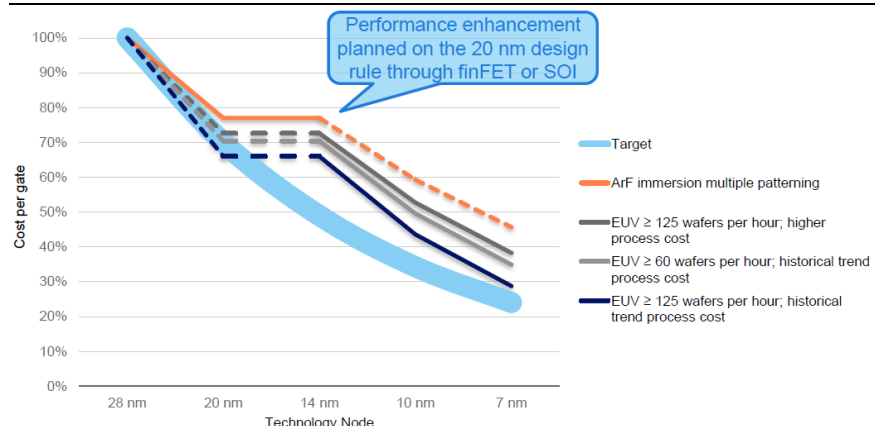


Source: Gartner

EUV has more scaling advantages

Without EUV (Extreme UltraViolet) it seems difficult to continue Moore's law sub 20nm. Performance can be enhanced by adding more functionality to the chip by using a three dimensional gate structure (finFET). Technically speaking the lithography intensity of 14/16nm finFET is similar to 20nm. As such, the costs per gate are similar for 14/16nm finFET and 20nm. ASML showed that although multiple patterning can still facilitate some scaling from current leading edge logic nodes, EUV is the better alternative.

Figure 2: EUV gives best scaling effects

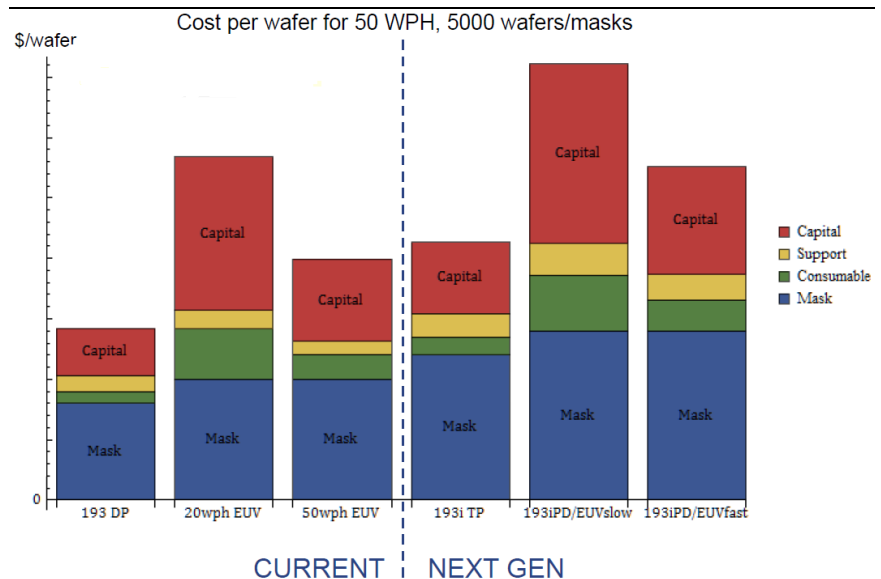


Source: ASML

Nikon: multiple patterning is more than competitive...

At SEMICON West, Nikon showed that it believes that triple patterning will be a more than competitive alternative to EUV for the production of next generation chips. It argued that in order to produce 50 wafers per hour the capital investment for equipment is far lower when using double (illustrated with “193 DP” in the graph) and triple patterning (“193i TP”) compared to EUV. For EUV Nikon used two scenarios, 1) a throughput of 20 wafers per hour (“slow”) and 2) a throughput of 50 wafers per hour (“fast”). With lower EUV throughput, more machines are needed to match the triple patterning solution and as a consequence also support and consumable costs are higher. Nikon also assumes that masks costs will be higher as mask degeneration is expected to be higher with EUV exposure.

Figure 3: Overview of competitiveness of multiple patterning versus EUV



Source: Nikon

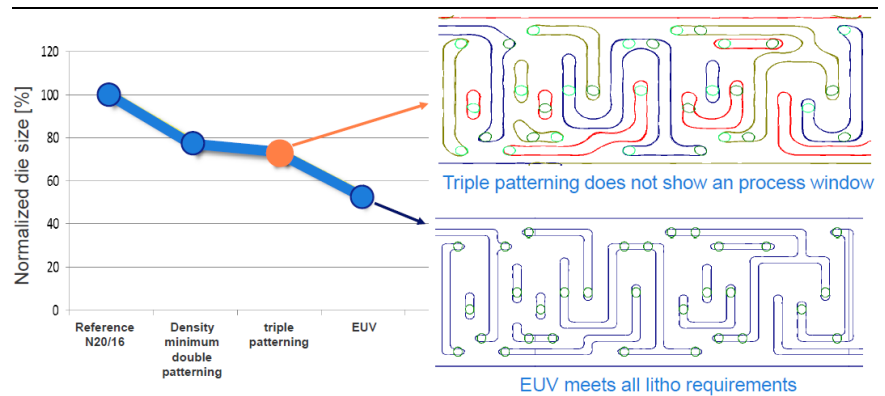
...Nikon's assumption on EUV throughput seems too low

We note that Nikon does not have an active EUV programme. As such it is questionable how it derived its assumptions to illustrate the competitiveness of double and triple patterning. In our view, Nikon's assumptions for EUV throughput are too low. For previous experiments ASML used a NXE:3100 set-up. For coming experiments ASML has updated its set-up to the NXE:3300B. As a consequence the demonstrated 55W source performance (communicated with the 1Q13 results) on the NXE:3100 set-up should already improve to 80W on the NXE:3300B set-up. 80W corresponds to a throughput of above 50 wafers per hour. We expect ASML to report this progress with the 3Q13 results. Therefore, ASML is already close to beating Nikon's EUV fast scenario. In our view, acceptance of EUV has clearly increased across the board. We believe the jump in progress to 80W with the 3Q13 will further increase EUV acceptance.

ARM design is more scalable with EUV

Nikon did not pay much attention to production yields either. Several equipment users are coming up with arguments why EUV should have preference compared to multiple patterning. One big advantage of EUV compared to multiple patterning is that EUV has a wider process window. A technique that offers a wider process window can handle situations better when factory circumstances start to deviate from ideal circumstances. In other words, a wider process window will lead to higher production yields. In order to scale a 20nm ARM chip towards 10nm, immersion technology does not have a process window, while EUV meets all requirements. As a consequence, multiple patterning can only reach a 25% scaling effect given the ARM chip design. With EUV, 50% scaling can be achieved.

Figure 4: EUV gives best scaling for 20nm ARM design towards 10nm

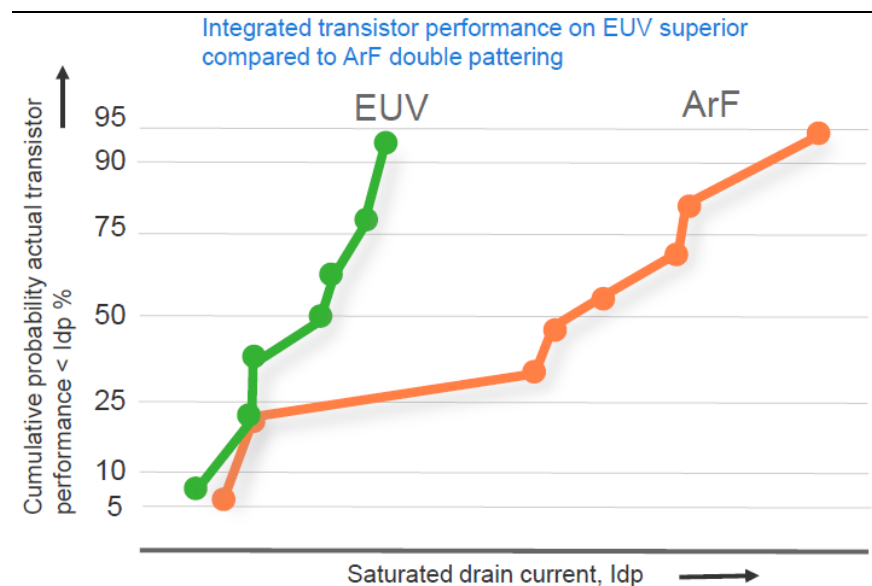


Source: ARM, scaled N20 nm flip-flop design, ASML

Intel shows less risk of drain leakage with EUV

With multiple patterning all exposures have to match to each other to enable sufficient overlap, leading to tight overlay requirements. Intel showed at the SPIE conference in February that overlap at 10nm gridded SRAM designs is failing with multiple patterning at 3nm overlay, while EUV meets all requirements. In the picture below Intel shows that the chances of drain leakage is significantly lower using EUV compared to ArF/multiple patterning. In general, a more vertical line is better. EUV is clearly performing better than double patterning.

Figure 5: EUV performance versus ArF

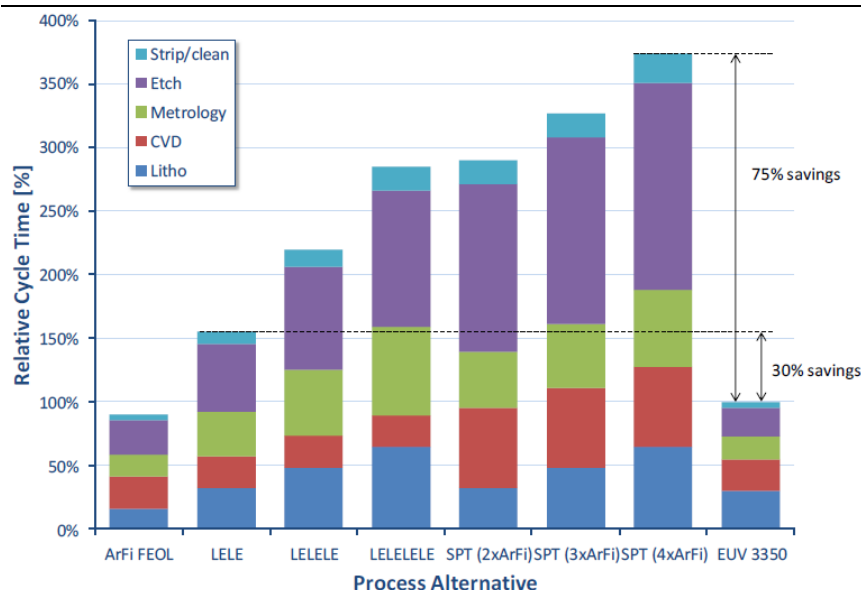


Source: Intel, SPIE, Feb 2013

EUV reduces cycle time mostly at the expense of other processes

ASML showed that EUV can reduce cycle times by 30% compared to double patterning and up to 75% compared to spacer defined quadruple patterning. A lower cycle time increases the output of a fab, which means lower costs per chip. With multiple patterning more lithography exposures are needed, also increasing needs for more strip/clean, etch, metrology and CVD process steps. With EUV it is possible to develop critical layers with a single exposure. As a consequence, the number of non-lithography process steps can be significantly reduced. As a result, ASML will be in the position to claim more of its clients capital expenditure programmes.

Figure 6: Overview of process cycle time



Source: ASML

Besides throughput, mask blanks still need improvements

At SEMICON West, Sematech presented that the main challenges for EUV are the source power and the readiness of mask blanks to support high volume EUV manufacturing. Sematech stated that the resist is in good shape. Additional investments are needed in order to get EUV mask blanks at the quality and volume needed for EUV high volume manufacturing ramp-up.

ASML sees three EUV adaption scenarios

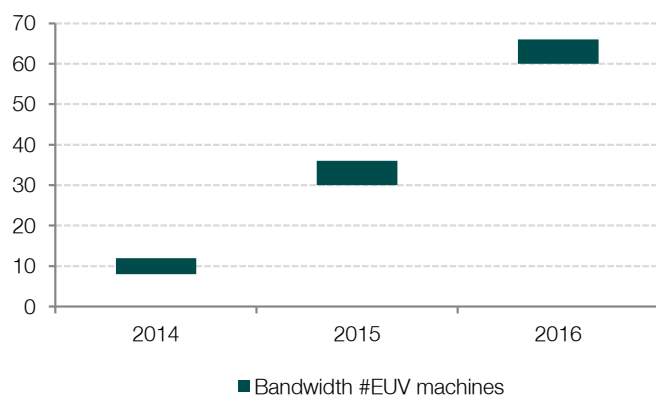
2.2. Size of EUV market over time

ASML sees three scenarios for EUV adaption dependent on throughput: 1) clients will only adapt EUV for a limited number of layers (1 or 2) and get a scaling benefit of 1.7-1.8x compared to 1.5x with multiple patterning, 2) clients will adapt EUV for 5-7 layers and get a scaling benefit of 2.0x and 3) clients will use EUV for up to 17 layers.

EUV machine sales can show strong ramp up to 2016

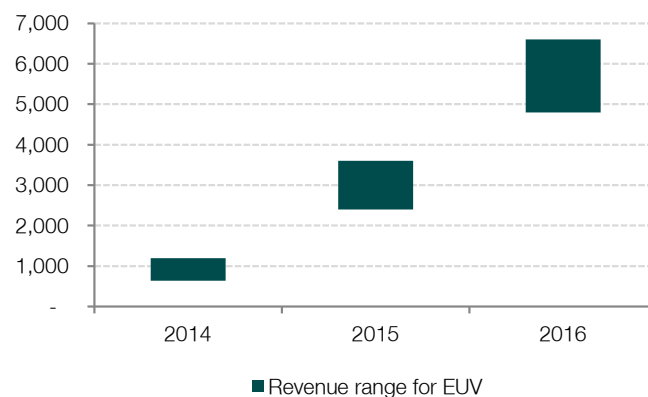
On multiple occasions ASML presented numbers on how many EUV machines the market could absorb. With a throughput of 70 wafers per hour, ASML expects that the industry will adapt EUV for 5-7 layers at 10nm logic nodes, which could lead to 60-66 EUV machines being sold in 2016 with an average selling price of EUR 80-100m. Therefore, EUV revenues alone can add up to EUR 4.8-6.6bn in 2016.

Figure 7: potential number of EUV machines sold



Source: ABN AMRO Equity Research

Figure 8: potential EUV revenues

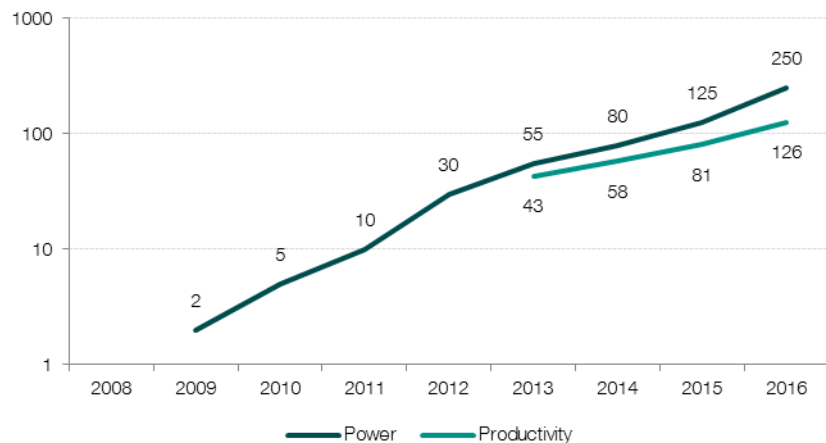


Source: ABN AMRO Equity Research

Progress is expected to be exponential

70 wafers per hour has a power requirement of 105W. As said we already expect the source to perform at 80W in 3Q13. Looking at ASML's EUV throughput roadmap we conclude that it could be somewhat conservative, as the 80W level in the roadmap is set at YE13/BOY14. ASML uses a logarithmic scale on the y-axis as progress on new technique generally shows exponential progress once it is working.

Figure 9: ASML's throughput roadmap



Source: ABN AMRO Equity Research, ASML

If ASML lives up to its roadmap, more EUV machines will be sold

Looking at ASML's roadmap and its assumptions for the given EUV machine sales in 2016 it seems that chances are increasing that we will move towards scenario 3.

Current design easily extendible to 81 wafers per hour throughput

MOPA pre-pulse technology has been an important step in the industrialization of EUV. With the MOPA pre-pulse technology tin droplets needed to create EUV light are stretched before hit by the laser making the conversion to EUV light more efficient. With the current design ASML is confident to extend the source power to 125W or 81 wafers per hour. In order to increase throughput further, ASML will probably need to make some adjustments to the design.

Speed of industry adaption is dependent on several factors

Although ASML is close to delivering a source power throughput equivalent of over 50 wafers per hour, the company remains dependent on the speed of EUV adaption at its clients. The speed of adaption will mainly be dependent on ASML's progress, client experience with the new technique, the availability of alternative techniques, potential cost savings for clients and the economic state of the world.

Prisoners' dilemma arises for clients to embrace EUV

We believe that continued progress will create a prisoners' dilemma for ASML clients to embrace EUV once 80W source power is demonstrated. The competitiveness at next generation nodes will be highly dependent on the throughput of EUV and the number of layers produced with EUV. As such, high volume manufacturers such as Intel, Samsung and TSMC cannot risk to lose market share due to insufficient layers being built with EUV. ASML's order intake on EUV should further increase with progress as it has limited capacity to fill demand.

Holistic tool packages will push APS up

2.3. Holistic tool kit to push EUV price to upper-end of range

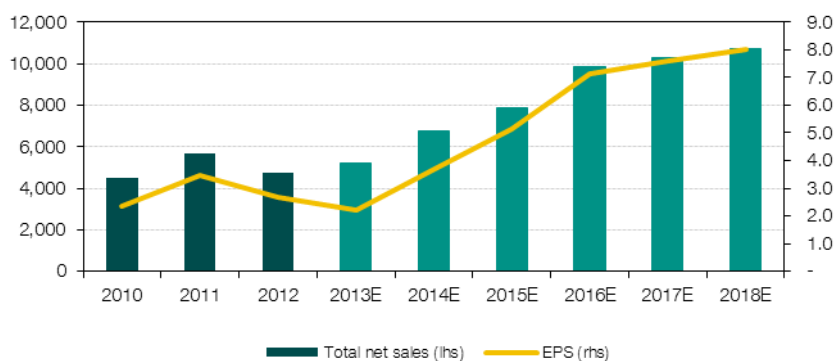
ASML has adapted a holistic tool package for immersion machines. This tool package adapts metrology and automatically adapts corrections for next wafer exposures. For layers where overlay is important, ASML's holistic tool package has shown strong added value for immersion machines already. As a result, client acceptance of ASML's holistic tool package has increased. For EUV layers overlay will also be very important. As such, the holistic tool package for EUV, which ASML is designing synchronically to EUV, is also likely to have added value for clients. We believe clients experience with the tool package for immersion machines will increase acceptance of similar added features for EUV machines. As a consequence, we believe it is more likely that the average selling price of EUV machines will move up to the upper-end of the range of EUR 80-100m.

Changes increased of EPS16 above EUR 7

2.4. Bump in EPS16 more certain

We reiterate our EPS scenarios for 2016 we published in January 2013. We believe chances have increased that ASML will be able to demonstrate our EPS16 scenario of above EUR 7. In our previous valuation we factored in two years of delay, which we take out in our current model.

Figure 10: EPS developments incorporated in our model



Source: ABN AMRO Equity Research

Vertical integration of Cymer should improve margins

In the following part we want to illustrate the potential effect of ASML's acquisition of Cymer on margins. With the vertical integration of Cymer, we believe ASML should be able to grow gross margins towards 50%. For our model we pencil in a gross margin of 45% in 2016 and following years. We keep some slack in our gross margin in order to allow for additional investments to keep system requirements on track.

EUV source cost price EUR 20m

We believe that the selling price of ArF and KrF lighting sources are respectively EUR 2m and EUR 1.5m (or 12.5% of ASML's non-EUV related machine sales), while an EUV lighting source is expected to costs around EUR 20m.

Figure 11: Projection of stand-alone P&L Cymer in 2016

	Bear	Base	Bull
Light source price	20	20	20
Revenue Cymer of non-EUV litho COGS	12.5%	12.5%	12.5%
Non-ASML market share	20%	20%	20%
Gross margin	50%	50%	50%
EBIT margin	15%	20%	25%
Tax and financing	30%	30%	30%
EUV related revenue	1,200	1,260	1,320
Non-EUV related ASML revenue	139	205	270
Nikon related revenue	35	51	67
Service related revenue	275	303	331
Total revenue	1,649	1,819	1,989
Gross profit	825	910	994
EBIT	247	364	497
Net income	173	255	348

Source: ABN AMRO Equity Research

On gross margin we keep some conservatism

Due to the acquisition of Cymer, we believe ASML can grow its gross margin towards 50% over time. In a base case scenario, we see an EPS16 of EUR 7.70.

Figure 12: ASML's pro forma income statement including Cymer

ASML and Cymer	Bear	Base	Bull
Cost synergies	20%	30%	40%
Revenue	8,589	10,663	12,798
COGS	4,536	5,527	6,472
Gross margin	47.2%	48.2%	49.4%
R&D	1,000	1,000	1,000
SG&A	280	280	280
Tax rate	13.0%	11.0%	9.0%
Net income	2,413	3,432	4,592
EPS	5.4	7.7	10.3
Multiple	14.0	15.0	16.0
Cost of equity	10.5%	10.5%	10.5%
Year of maximum order book	2016	2016	2016
Discounting years	2	2	2
Valuation	61.9	94.4	134.7

Source: ABN AMRO Equity Research

3. Optimistic market outlook for 2014

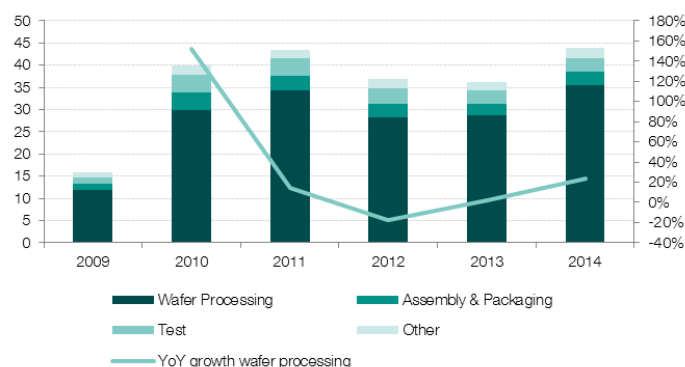
SEMI expects the equipment market to increase with 21.1% in 2014, while Gartner foresees an increase of 19.1%. Both see a strong rebound in memory spending. As a result of these market forecasts, ASML's earnings momentum is likely to remain positive. Possible small delays on EUV will not be enforced by an economic downturn. In such a scenario, we believe investors should keep focus on the upside EUV can still realise.

SEMI/Gartner: c. 20% growth for semi equipment spending

3.1. SEMI and Gartner are positive on 2014

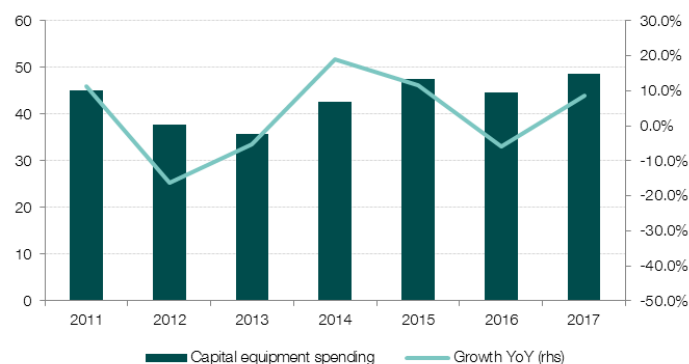
SEMI expects the semi equipment market to show an increase of 21.1% in 2014. For all front-end equipment SEMI expects to see a growth of 24% in 2014, while assembly and packaging equipment is expected to grow with 13.7%. Gartner expects equipment spending to increase with 19.1% in 2014. For front-end equipment Gartner expects to see an increase in spending of 17.4% in 2014, while it sees an increase of 23.4% for assembly and packaging. As such, SEMI and Gartner have a different view on which segment will show the strongest growth.

Figure 13: Equipment spending forecasts



Source: SEMI, ABN AMRO Equity Research

Figure 14: Equipment spending forecasts



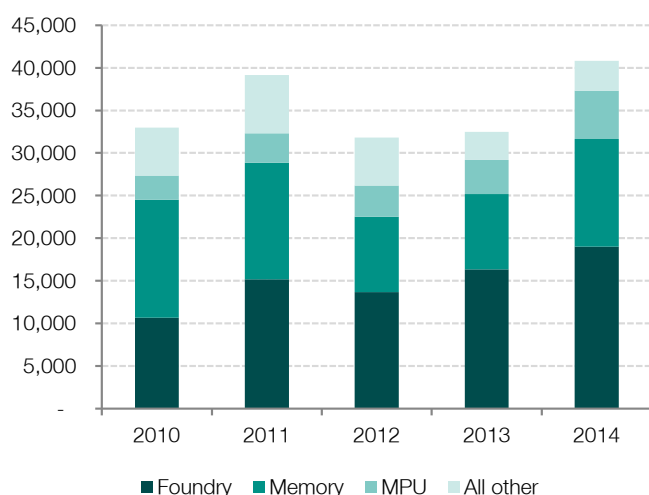
Source: Gartner, ABN AMRO Equity Research

SEMI: memory up with c. 40%

3.2. Both SEMI and Gartner see strong rebound in memory

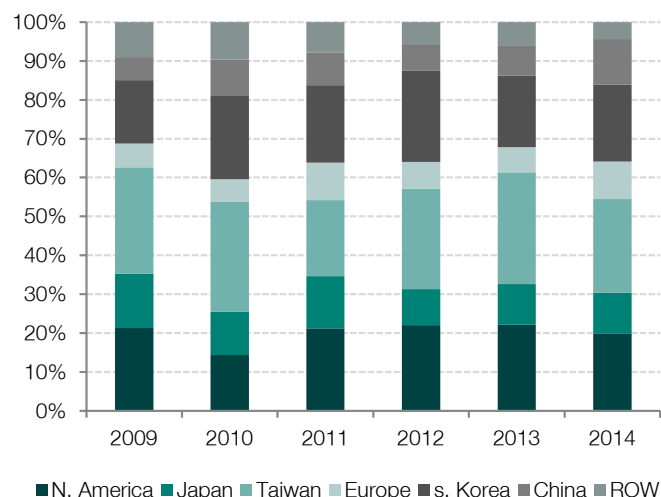
Foundries are expected to remain the strongest spenders, while memory is expected to show a strong rebound in 2014. SEMI believes that memory spending will increase with c. 40%, while foundry spending is expected to increase with c. 15%. MPU and other spending is expected to increase with respectively c. 40% and c. 5%. Taiwan, North America and Korea will remain the strongest spending regions.

Figure 15: Breakdown to spending segments



Source: SEMI, ABN AMRO Equity Research

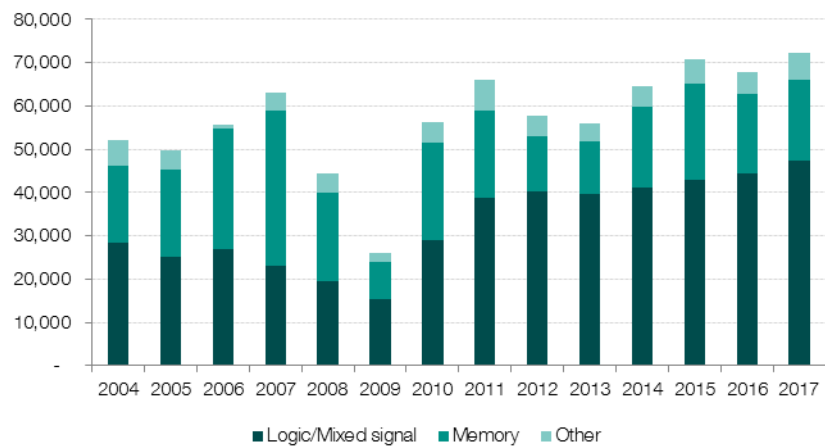
Figure 16: Geographic importance of spending



Source: SEMI, ABN AMRO Equity Research

Gartner: memory up by c. 50%

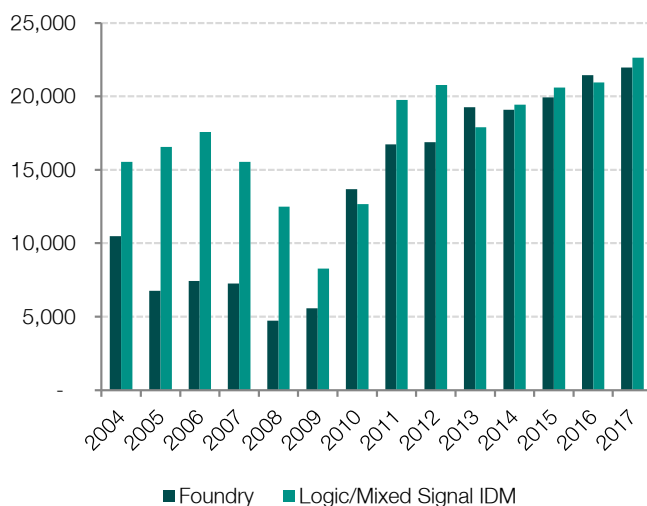
Gartner sees c. 5% growth for logic/mixed signal spending while it expects the memory segment to increase spending by c. 50%. Other spending is expected to show a growth rate of c. 20%.

Figure 17: Breakdown to spending segments

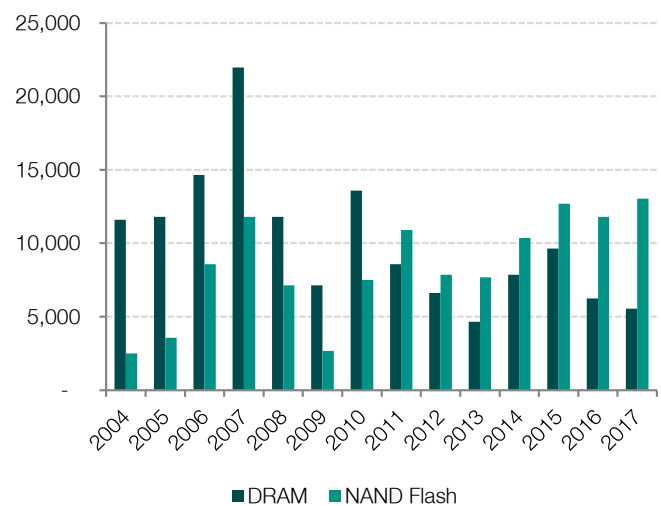
Source: Gartner, ABN AMRO Equity Research

DRAM to show stronger growth in 2014 than NAND Flash

Gartner believes that foundry spending will stay at a similar level in 2014 compared to 2013. Logic/mixed signal IDM spending is expected to improve by c. 10%. Within memory, DRAM is expected to show a YoY rebound of c. 70%, while NAND Flash is expected to grow with c. 35%. NAND Flash spending is expected to remain stronger during the projection period.

Figure 18: Foundry vs IDM spending

Source: Gartner, ABN AMRO Equity Research

Figure 19: DRAM vs NAND Flash spending

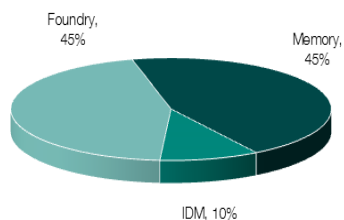
Source: Gartner, ABN AMRO Equity Research

ASML will also benefit from industry tailwind

3.3. ASML's reliance on foundry, IDM and memory

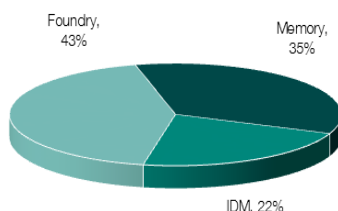
Although ASML's 2Q13 sales relied for 45% on memory spending, the company's reliance on memory spending is still at relatively low levels. Per 2Q13 memory only represented 21% of ASML's outstanding backlog. While foundry and IDM are expected to remain strong, memory should be the segment significantly increasing spending in 2014. As a consequence, also ASML should benefit from the tailwinds the industry is providing.

2Q13 sales reliance



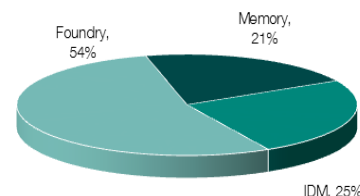
Source: iSuppli, ABN AMRO

2Q13 bookings reliance



Source: iSuppli, ABN AMRO

2Q13 backlog reliance



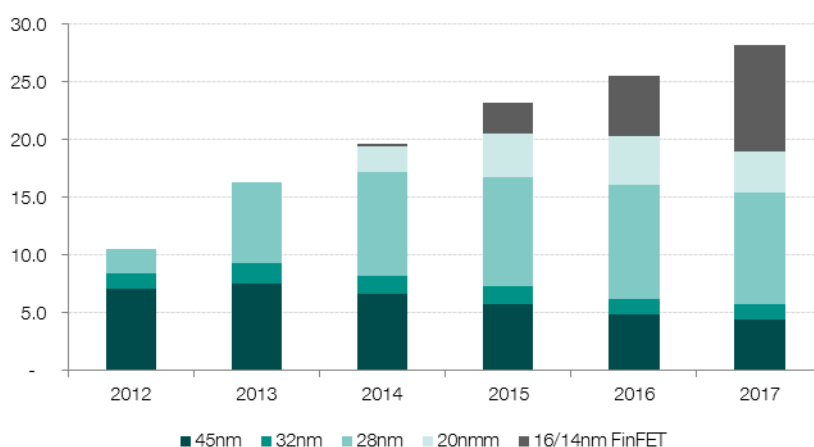
Source: iSuppli, ABN AMRO

Foundry spending focused on 14/16nm FinFET and 20nm

3.4. Other industry estimates

By giving estimates for foundry revenues per technology nodes, Gartner also provided insight in their expectations on how fast new nodes will ramp up. Before foundries can have revenues on a certain node, it needs to have made investments in the prior year. Since 28nm revenues will no longer increase past 2014, it shows that 28nm spending is likely past its peak. Investments will be focused on 14/16nm FinFET and 20nm for following years.

Figure 20: Foundry revenues of advanced nodes



Source: Gartner, ABN AMRO Equity Research

Three dominant players account for >50% of total

Intel, TSMC and Samsung continue to have the largest wallet size from a capital expenditure point of view. We expect that will remain the case in the future.

Figure 21: Capital expenditure spending per company

	2012	2013
Intel	11,027	11,000
TSMC	8,300	10,000
Samsung	12,100	9,500
GlobalFoundries	3,800	4,500
SK Hynix	3,420	2,600
Micron Technologies	1,700	1,800
United Microelectronics Group	1,750	1,500
Toshiba	904.1	1,288.2
SanDisk	979	1,100
SMIC	499	675
Advanced Semiconductor Engineering	1007	650
Sony	902.1	637.3
Infineon	900	600
Amkor Technologies	533	600
STMicroelectronics	476	550
Nichia Chemical	696.7	530.9
Siliconware Precision Company	512	502
Texas Instruments	495	450
STATS ChipPAC	409.9	387
IBM Microelectronics	405	380.7
Top 20	50,815.8	49,251.1
Total worldwide	58,742.8	56,704.5
Top20 vs total	86.5%	86.9%

Source: Gartner, ABN AMRO Equity Research

4. Valuation

We believe ASML is moving more and more towards a monopoly. On that basis, ASML still looks cheap when compared to another near monopolist in the semiconductor sector ARM. As such we reiterate our Buy rating and increase our target price from EUR 60 to EUR 80 on the back of our updated DCF model.

More conservative on margins compared to consensus

4.1. ABN AMRO versus consensus

We are in line with consensus on sales estimates, but believe that gross margins will be held back due to the Cymer integration and relatively low gross margins for the first EUV machines that will be rolled out in 2014. For FY14 we model for an EPS of EUR 3.54, while consensus is at EUR 3.82. Despite the fact that we are 3% below consensus on EPS14, we remain positive on ASML. EUV roll-out will accelerate in 2015 and 2016 which should enable strong EPS growth.

Figure 22: ABN AMRO versus consensus

	Consensus			ABN AMRO			Difference		
	3Q13	4Q13	FY14	3Q13	4Q13	FY14	3Q13	4Q13	FY14
Sales	1,331	1,749	6,773	1,331	1,772	6,756	0.0%	1.3%	-0.3%
Gross margin	40.0%	42.0%	44.0%	40.6%	42.4%	43.6%	+60bps	+40bps	-40bps
EBIT	217	442	1,803	221	445	1,774	1.9%	0.6%	-3.3%
EPS	0.5	0.93	3.82	0.46	0.93	3.71	-8.6%	0.2%	-2.9%

Source: ABN AMRO Equity Research, ASML

PPA adjustments put pressure on margins

4.2. Estimates revision table

Our previous estimates are dated from January 2013. Today we update our numbers and also include Cymer in our numbers. The integration of Cymer (and PPA adjustment effects) together with higher R&D efforts put pressure on ASML's margins.

Figure 23:

	Previous 2013	New 2013	% change	Previous 2014	New 2014	% change
Sales	4,886	5,182	6.0%	6,055	6,756	11.6%
Gross profit	1,984	2,114	6.6%	2,519	2,944	16.9%
EBIT	1,168	1,004	-14.1%	1,681	1,744	3.7%
EPS	2.49	2.20	-11.5%	3.59	3.71	3.3%

Source: ABN AMRO Equity Research

ASML and ARM both are near monopolist in the same industry

4.3. ASML is cheap compared to ARM

ASML will have a near monopoly if EUV will become economically viable. ARM already has a near monopoly. ARM designs chip structures and sells licenses to chip users for which ARM gets a royalty fee (% of revenue of semi content sold with the ARM design). ARM trades at 35x P/E14 which diminishes to 20x P/E16 due to strong EPS momentum. ARM's ROCE according to Bloomberg in 2012 was equal to 15.3%, while ASML demonstrated 26.2%.

Figure 24: Estimates going forward

ARM	2013	2014	2015	2016
Sales	703	815	936	1,081
adjusted EPS	0.199	0.252	0.302	0.434
EPS growth	33.6%	26.6%	19.8%	43.7%
Price/EPS adjusted	44.6	35.2	29.4	20.4

Source: Bloomberg

ASML trades at a large discount compared to ARM

For ASML we expect to see stronger EPS growth due to the earlier described EUV technology roll-out. ASML trades at 20x P/E14, which diminishes to 10x P/E16. As such, ASML appears cheap compared to ARM. ASML is dependent on its new technology to meet the desired characteristics, while ARM is mainly dependent on semi content growth (mainly mobile device processors).

Intel seems a stronger competitor for ARM than Nikon is for ASML

ARM's main competitor in the future will be Intel. We believe Intel is a stronger competitor for ARM than Nikon is for ASML. For example, Intel is gaining traction in the mobile device arena as Samsung used an Intel processor in the Samsung Galaxy Tab 3. As such, we believe the discount of c. 50% on P/E15 and P/E16 seems fairly large.

Figure 25: ABN AMRO estimates going forward

ASML	2013	2014	2015	2016
Sales	5,182	6,756	7,864	9,884
adjusted EPS	2.05	3.71	5.16	7.14
EPS growth	-23.9%	68.3%	39.1%	38.5%
Price/EPS adjusted	33.5	18.5	13.3	9.6

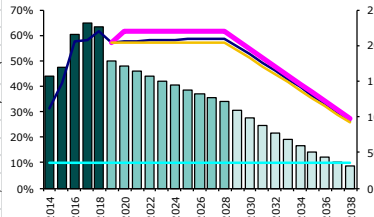
Source: ABN AMRO Equity Research

4.4. DCF points to EUR 80

DCF remains our preferred valuation method

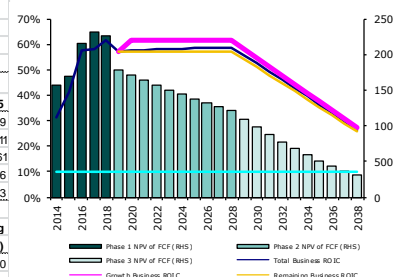
Based on DCF we arrive at a target price of EUR 80. We use a WACC of 10.0% and zero growth in our terminal value. We have an explicit forecast period until FY18. After FY18 we assume 5% growth for 10 years, which is faded to zero in the ten years after that. Our increased target price from EUR 60 to EUR 80 is mainly a reflection of less delay in reaching an EPS of above EUR 7.00. In our previous valuation we assumed two years of delay. We also see less risks that growth will be subdued after the initial roll-out of EUV. ASML's roadmap shows that EUV can be extended for more generations. As a consequence, ASML should be able to benefit from its monopoly on EUV for an extended time period.

Figure 26: DCF valuation

Economic Profit Valuation				EUR	%	Discounted Cash Flow Valuation				EUR	%
Adjusted Opening Invested Capital				5,430.0	16	Value of Phase 1 Explicit (2014 to 2018)				9,982.3	30
NPV of Economic Profit During Explicit Period				8,306.7	25	Value of Phase 2: Value Driver (2019 to 2028)				14,816.4	45
NPV of Econ Profit of Remaining Business (1,2)				13,937.2	42	Value of Phase 3: Fade (2029 to 2043)				7,413.3	22
NPV of Econ Profit of Net Inv (Grth Business) (1,3)				5,333.2	16	Terminal Value				797.1	2
Enterprise Value				33,007.0	100	Enterprise Value				33,009.1	100
Plus: Other Assets				-	0	FCF Grth Rate at end of Phs 1 implied by DCF Valuation				0.2	
Less: Minorities				-	0	FCF Grth Rate at end of Phs 1 implied by Current Price				-2.3	
Less: Net Debt / Leases (as at 30 Dec 2013)				(2,139.4)	-6						
Equity Value				35,146.4	106						
No. Shares (millions)				437.8							
Per Share Equity Value				80.3							
Current Share Price				68.6							
Sensitivity Table				No. of Years in Fade Period					Returns, WACC and NPV of Free Cash Flow		
				5	10	15	20	25			
WACC	8.0%	83.43	90.59	96.92	102.56	107.59					
	9.0%	77.02	82.87	87.92	92.29	96.11					
	10.0%	71.44	76.24	80.27	83.69	86.61					
	11.0%	66.53	70.49	73.73	76.41	78.66					
	12.0%	62.20	65.46	68.08	70.20	71.93					
Performance Summary				Phase 2 Avg							
				2014	2015	2016 (2019 - 2028)					
Invested Capital Growth (%)				-0.3	3.4	5.9		5.0			
Operating Margin (%)				25.9	29.0	33.3		35.3			
Capital Turnover (x)				1.3	1.5	1.9		1.9			

Source: ABN AMRO

1. In periods following the Explicit Period i.e. Phase 2 and Phase 3
2. Remaining Business is defined as Capital as at the end of Phase 1 and capex = depreciation thereafter
3. Net Investment is defined as capex over and above depreciation after Phase 1



P & L Statement (EUR m) Year to December	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
Net sales	3,768.2	2,953.7	1,596.1	4,507.9	5,651.0	4,731.5	5,181.9	6,755.8	7,863.6	9,884.0
Other income	0.0	0.0	0.0	0.0	0.0	0.0	67.5	80.0	158.4	158.4
Personnel costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other operating costs	(2,818.1)	(2,538.8)	(1,601.6)	(3,097.2)	(3,832.3)	(3,384.8)	(3,954.4)	(4,854.2)	(5,429.6)	(6,554.0)
EBITDA	950.1	414.9	(5.5)	1,410.7	1,818.7	1,346.7	1,295.0	1,981.6	2,592.4	3,488.4
Depreciation	(126.3)	(121.4)	(141.6)	(151.4)	(165.2)	(186.6)	(288.0)	(234.5)	(172.0)	(158.9)
EBITA	823.7	293.5	(147.1)	1,259.3	1,653.5	1,160.1	1,007.0	1,747.1	2,420.3	3,329.5
Reported provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation	(9.0)	(4.3)	(16.0)	(8.6)	(12.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)
EBIT	814.7	289.2	(163.1)	1,250.7	1,641.2	1,156.8	1,003.7	1,743.8	2,417.0	3,326.2
Net financials	33.5	20.4	(8.4)	(8.2)	7.4	(6.2)	(2.7)	2.3	12.3	37.3
Profit Before Taxes (PBT)	848.2	309.6	(171.6)	1,242.5	1,648.6	1,150.6	1,001.0	1,746.2	2,429.3	3,363.5
Taxes	(177.2)	12.7	20.6	(220.7)	(181.7)	(4.3)	(70.1)	(122.2)	(170.1)	(235.4)
Income from associates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minorities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net profit before extraordinary	671.0	322.4	(150.9)	1,021.8	1,467.0	1,146.3	930.9	1,623.9	2,259.3	3,128.1
Extraordinary items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net reported profit	671.0	322.4	(150.9)	1,021.8	1,467.0	1,146.3	930.9	1,623.9	2,259.3	3,128.1
% change in Sales	4.8	(21.6)	(46.0)	182.4	25.4	(16.3)	9.5	30.4	16.4	25.7
% change in EBITDA	(2.6)	(56.3)	ns	ns	28.9	(26.0)	(3.8)	53.0	30.8	34.6
% change in EBITA	(8.0)	(64.4)	ns	ns	31.3	(29.8)	(13.2)	73.5	38.5	37.6
% change in PBT	(2.5)	(63.5)	ns	ns	32.7	(30.2)	(13.0)	74.4	39.1	38.5
% change in Net profit before extraordinary	7.4	(52.0)	ns	ns	43.6	(21.9)	(18.8)	74.4	39.1	38.5

Cash Flow Statement (EUR m)	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
EBITDA	950.1	414.9	(5.5)	1,410.7	1,818.7	1,346.7	1,295.0	1,981.6	2,592.4	3,488.4
Change in provisions excluding tax provisions	0.0	0.0	0.0	0.0	0.0	(127.8)	0.0	0.0	0.0	0.0
Change in net working capital	(81.7)	40.2	58.4	(516.3)	225.1	10.4	(36.7)	(150.0)	(150.0)	(300.0)
Gross operating cash flow	868.4	455.1	52.9	894.4	2,043.8	1,229.3	1,258.3	1,831.6	2,442.4	3,188.4
Taxes paid	(251.6)	(145.6)	91.9	(184.0)	(254.2)	(4.3)	(70.1)	(122.2)	(170.1)	(235.4)
Capex	(179.2)	(259.8)	(105.0)	(128.7)	(301.0)	(179.5)	(150.0)	(75.0)	(200.0)	(180.0)
Free cash flow	437.7	49.8	39.8	581.7	1,488.6	1,045.5	1,038.2	1,634.4	2,072.3	2,772.9
Net interest received	33.5	20.4	(8.4)	(8.2)	7.4	(6.2)	(2.7)	2.3	12.3	37.3
Other	52.0	(44.0)	(33.5)	242.8	277.4	(515.5)	5.0	5.0	5.0	5.0
Acquisitions	(188.0)	0.0	0.0	0.0	0.0	(10.3)	(443.7)	0.0	0.0	0.0
Divestments	5.0	0.0	6.9	3.8	0.0	0.0	0.0	0.0	0.0	0.0
Share issues/buybacks	(296.5)	(76.1)	11.1	31.0	(666.4)	(356.0)	(84.7)	0.0	0.0	0.0
Dividend (adj. stock dividend)	0.0	(107.8)	(86.5)	(87.0)	(172.6)	(188.9)	(223.9)	(262.7)	(289.0)	(317.9)
Extraordinary items (after tax)	0.0	0.0	0.0	150.0	(150.0)	0.0	0.0	0.0	0.0	0.0
Change in interest-bearing debt	(427.8)	(4.6)	(1.4)	(1.4)	(2.5)	(2.9)	0.0	0.0	0.0	0.0
Change in cash & cash equivalents	(384.2)	(162.5)	(72.0)	912.8	781.9	(34.3)	288.2	1,379.0	1,800.7	2,497.4

Balance Sheet (EUR m)	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
Net intangible fixed assets	166.5	158.1	149.6	154.9	154.4	159.1	2,669.6	2,589.6	2,569.6	2,549.6
Net tangible fixed assets	380.9	540.6	655.4	745.3	1,053.6	1,029.9	1,013.6	925.8	965.4	998.3
Financials fixed assets (FFA)	201.0	267.4	210.3	335.6	346.0	389.6	389.6	389.6	389.6	389.6
Inventories	1,102.2	999.2	963.4	1,497.2	1,624.6	1,857.0	1,800.0	1,900.0	2,100.0	2,650.0
Trade debtors	638.0	463.3	377.4	1,123.5	880.6	605.3	700.0	900.0	1,050.0	1,300.0
Other debtors	312.9	401.6	371.0	373.9	469.8	672.0	672.0	672.0	672.0	672.0
Cash & securities	1,271.6	1,109.2	1,037.1	1,949.8	2,731.8	2,697.6	2,985.8	4,364.9	6,165.5	8,662.9
Total Assets	4,073.1	3,939.4	3,764.2	6,180.4	7,260.8	7,410.5	10,230.6	11,741.8	13,912.2	17,222.4
Shareholder's equity	1,891.0	1,988.8	1,774.8	2,773.9	3,444.2	4,066.9	6,886.0	8,247.2	10,217.6	13,027.8
Other equity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minorities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provisions	253.4	295.2	245.5	540.6	849.8	501.4	501.4	501.4	501.4	501.4
Long-term interest bearing debt	602.0	647.1	699.8	710.1	733.8	755.9	755.9	755.9	755.9	755.9
Short-term interest bearing debt	0.0	0.0	0.0	0.0	2.6	19.8	19.8	19.8	19.8	19.8
Trade creditors	283.0	193.7	206.2	555.4	444.3	447.0	450.0	500.0	600.0	900.0
Other non-interest bearing liabilities	1,043.8	814.7	837.9	1,600.4	1,786.1	1,619.5	1,617.5	1,717.5	1,817.5	2,017.5
Total Liabilities & Capital	4,073.1	3,939.4	3,764.2	6,180.4	7,260.8	7,410.5	10,230.6	11,741.8	13,912.2	17,222.4
Enterprise Value (EV)	8,861.1	4,952.3	10,186.3	11,438.1	11,514.0	17,232.4	27,041.2	25,662.2	23,861.5	21,364.1
Net debt/(Net cash)	(669.6)	(462.1)	(337.3)	(1,239.8)	(1,995.4)	(1,921.9)	(2,210.2)	(3,589.2)	(5,389.9)	(7,887.3)
Capital Employed incl. goodwill (avg.)	718.3	1,615.9	1,730.0	1,862.9	2,175.6	2,463.3	3,580.7	4,556.0	4,682.0	4,943.2
Cumulative goodwill (as of 1991)	128.3	131.5	131.5	141.3	146.0	149.2	2,017.3	2,017.3	2,017.3	2,017.3
Capital Employed (avg.)	737.4	1,648.3	1,752.4	1,878.8	2,186.6	2,472.5	3,911.8	5,168.3	5,244.3	5,485.5
Net working capital	726.4	855.7	667.6	838.8	744.6	1,067.8	1,104.5	1,254.5	1,404.5	1,704.5
Discounted value of leases										
Adjusted equity	2,019.3	2,120.2	1,906.2	2,915.2	3,590.2	4,216.1	8,903.3	10,264.5	12,234.9	15,045.1

Per Share Data (EUR)	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
Avg. no. of shares (m)	462.4	431.6	432.6	435.1	425.6	424.1	422.5	437.8	437.8	437.8
Eoy. no. of shares (m)	435.6	432.1	433.6	436.6	413.7	407.2	437.8	437.8	437.8	437.8
Avg. no. of shares fully diluted (m)	485.6	434.2	432.6	439.0	429.1	427.0	422.5	437.8	437.8	437.8
Enterprise Value (EV)	20.34	11.46	23.49	26.20	27.83	42.32	61.76	58.61	54.50	48.80
Net debt less FFA plus minorities	(2.00)	(1.69)	(1.26)	(3.61)	(5.66)	(5.68)	(5.94)	(9.09)	(13.20)	(18.90)
Sales	8.15	6.84	3.69	10.36	13.28	11.16	12.27	15.43	17.96	22.58
EBITDA	2.05	0.96	(0.01)	3.24	4.27	3.18	3.07	4.53	5.92	7.97
EBITA	1.78	0.68	(0.34)	2.89	3.89	2.74	2.38	3.99	5.53	7.60
EBIT	1.76	0.67	(0.38)	2.87	3.86	2.73	2.38	3.98	5.52	7.60
Net profit before extr. & amort. (EUR)	1.47	0.76	(0.31)	2.37	3.48	2.71	2.21	3.72	5.17	7.15
Net profit before extraordinary (EUR)	1.45	0.75	(0.35)	2.35	3.45	2.70	2.20	3.71	5.16	7.14
Cash Flow (EUR)	1.74	1.04	0.02	2.72	3.86	3.15	2.89	4.25	5.56	7.51
Gross Dividend (EUR)	0.00	0.20	0.20	0.40	0.46	0.53	0.60	0.66	0.73	0.80
Book value (EUR)	3.98	4.61	4.10	6.37	8.10	9.58	16.30	18.84	23.34	29.76
Adjusted equity	4.64	4.91	4.40	6.68	8.68	10.35	20.34	23.44	27.94	34.36
Free Cash Flow	0.95	0.12	0.09	1.34	3.50	2.47	2.46	3.73	4.73	6.33
% change in EPS before extr. & amort.	7.60	(48.54)	ns	ns	46.78	(22.01)	(18.43)	68.08	39.05	38.40
Valuation	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
P/E (excl. extr. & amort.)	14.8	21.0	nmf	10.5	8.3	15.3	30.6	18.2	13.1	9.5
P/CF (x)	12.5	15.3	1,115.4	9.1	7.5	13.1	23.4	15.9	12.2	9.0
P/Book (x)	5.6	2.9	6.0	4.7	4.1	5.0	4.2	3.6	2.9	2.3
Dividend yield (%)	0.0	1.3	1.2	1.6	1.6	1.3	0.9	1.0	1.1	1.2
Free cash flow yield (%)	5.0	1.0	0.4	5.3	12.5	6.2	3.5	5.5	7.0	9.5
EV/Sales (x)	2.4	1.7	6.4	2.5	2.0	3.6	5.2	3.8	3.0	2.2
EV/EBITDA (x)	9.3	11.9	nmf	8.1	6.3	12.8	20.9	13.0	9.2	6.1
EV/EBITA (x)	10.8	16.9	nmf	9.1	7.0	14.9	26.9	14.7	9.9	6.4
EV/EBIT (x)	10.9	17.1	nmf	9.1	7.0	14.9	26.9	14.7	9.9	6.4
EV/Capital Employed (x)	12.0	3.0	5.8	6.1	5.3	7.0	6.9	5.0	4.6	3.9
EV/CE (incl. goodwill) (x)	12.3	3.1	5.9	6.1	5.3	7.0	7.6	5.6	5.1	4.3
Share price : High (EUR)	25.77	22.34	25.00	30.18	33.83	49.65	70.33			
Share price : Low (EUR)	18.15	11.02	11.71	20.29	22.97	32.81	47.20			
Share price : Average (EUR)	21.81	15.91	17.25	24.83	28.93	41.42	67.70	67.70	67.70	67.70
Share price : Year end (EUR)	22.34	13.15	24.75	29.81	33.49	48.00	67.70	67.70	67.70	67.70
Capital Efficiency/Solvability	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
Sales/CE (incl. goodwill)	5.2	1.8	0.9	2.4	2.6	1.9	1.4	1.5	1.7	2.0
Sales/Fixed assets (x)	9.9	5.5	2.4	6.0	5.4	4.6	5.1	7.3	8.1	9.9
Sales/Net working capital (x)	5.2	3.5	2.4	5.4	7.6	4.4	4.7	5.4	5.6	5.8
Inventories/Sales (days)	106.8	123.5	220.3	121.2	104.9	143.3	126.8	102.7	97.5	97.9
Trade debtors/Sales (days)	61.8	57.2	86.3	91.0	56.9	46.7	49.3	48.6	48.7	48.0
Trade creditors/Sales (days)	27.4	23.9	47.2	45.0	28.7	34.5	31.7	27.0	27.9	33.2
CAPEX/Depreciation (%)	141.8	214.0	74.1	85.0	182.2	96.2	52.1	32.0	116.3	113.3
Equity/Total assets (%)	46.4	50.5	47.1	44.9	47.4	54.9	67.3	70.2	73.4	75.6
Net debt/Equity (%)	(35.4)	(23.2)	(19.0)	(44.7)	(57.9)	(47.3)	(32.1)	(43.5)	(52.8)	(60.5)
Interest cover (x)	20.2	7.0	(2.0)	54.7	50.2	high	45.3	78.1	108.3	149.5
Dividend payout (%)	0.0	(33.0)	64.1	(8.4)	(11.7)	(16.4)	(24.0)	(16.1)	(12.8)	(10.2)
ROCE (average) (%)	88.4	18.5	(7.4)	55.1	67.3	46.7	23.9	31.4	42.9	56.4
ROCE (incl. goodwill) (average) (%)	90.7	18.9	(7.5)	55.6	67.6	46.9	26.2	35.7	48.1	62.6
Operating Efficiency & Profitability ratios	2007	2008	2009	2010	2011	2012	2013e	2014e	2015e	2016e
Sales per FTE employee ('000s)	489.8	356.6	200.2	532.5	590.4	490.3	537.6	684.3	796.5	667.4
Wage costs per FTE employee ('000s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT per FTE employee ('000s)	105.9	34.9	(20.5)	147.7	171.5	119.9	104.1	176.6	244.8	224.6
Gross margin (%)	41.1	34.4	28.7	43.4	43.3	42.4	40.8	43.6	45.0	45.0
EBITDA margin (%)	25.2	14.0	(0.3)	31.3	32.2	28.5	25.0	29.3	33.0	35.3
Operating margin (%)	21.6	9.8	(10.2)	27.7	29.0	24.4	19.4	25.8	30.7	33.7
Net margin (%)	18.0	11.1	(8.5)	22.9	26.2	24.3	18.0	24.1	28.8	31.7
Tax rate (%)	20.9	(4.1)	12.0	17.8	11.0	0.4	7.0	7.0	7.0	7.0

Important disclosures

Issuer	Ticker	Price (EUR)
ASML	ASML.AS	67.70

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Marc Hesselink - Equity Research Analyst

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SELL	SELL	The investment case is definitively negative. Investors should sell the stock at any conditions. Expected performance: negative	12%	8%

Historical equity recommendations and target price for ASML (EUR)



History of Target Prices		
Date	Recommendation	Target Price
4/18/2013	BUY	EUR 60.00
4/17/2013	BUY	EUR 72.00
1/22/2013	BUY	EUR 60.00
10/19/2012	HOLD	EUR 42.29
7/18/2012	BUY	EUR 49.51
4/18/2012	BUY	EUR 45.38
2/24/2012	BUY	EUR 42.29
12/1/2010	NO OPINION	EUR

History of Recommendations		
Date	Recommendation	Target Price
1/22/2013	BUY	EUR 60.00
10/19/2012	HOLD	EUR 42.29
2/24/2012	BUY	EUR 42.29
12/1/2010	NO OPINION	EUR

Source: ABN AMRO Bank Equity Research, FactSet

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